

WHAT IS CLAIMED IS:

1. An electronic device comprising a plastic dual-in-line packaging (PDIP) package structure, the PDIP package structure including:

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a mold structure;

a die disposed within the mold structure; and

a die attach pad coupled to the die, the die attach pad having a first surface exposed from the mold structure.

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2. The electronic device of Claim 1, further comprising a motherboard, wherein the exposed first surface of the die attach is thermally coupled to the motherboard.

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3. The electronic device of Claim 2, wherein the exposed first surface of the die attach is in direct contact with the motherboard.

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4. The electronic device of Claim 1, wherein the mold structure has a first surface, and wherein the first surface of the die attach pad is exposed from and substantially flush with the first surface of the mold structure.

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5. The electronic device of Claim 1, further comprising a heat sink disposed in thermal communication with the exposed first surface of the die attach pad.

6. The electronic device of Claim 1, further comprising a motherboard, wherein the mold structure has a first side generally facing the motherboard and a second side opposite the first side, and wherein the first surface of the die attach is exposed from the second side of the mold structure.

7. The electronic device of Claim 1, wherein the PDIP package structure further includes a plurality of leads, a portion of the plurality of leads extending into contact with the die attach pad such that portion of leads are ground leads that remove heat from the die attach pad.

8. The electronic device of Claim 1, wherein the PDIP package structure further includes:  
a plurality of leads;  
and a conductive portion coupled to the die attach pad and a portion of the plurality of leads such that heat is removed from the die via the die attach pad, the conductive portion and the portion of leads.

9. The electronic device of Claim 1, wherein the PDIP package structure further includes:  
a plurality of active leads, each coupled to the die by a conductive wire;  
a plurality of inactive leads; and  
a conductive portion coupled to the die attach pad and to each of the plurality of inactive leads such that heat is removed from the die via the die attach pad, the conductive portion and the plurality of inactive leads.

10. The electronic device of Claim 9, wherein the plurality of active leads includes a first portion of active leads located generally near a first end of the PDIP package structure and a second portion of active leads located generally near a second end of the PDIP package structure, the second end of the PDIP package structure located generally opposite the first end of the PDIP package structure; and

wherein the plurality of inactive leads are located generally between the first and second portions of active leads.

11. The electronic device of Claim 9, wherein the plurality of active leads are located generally near a first end of the PDIP package, and the plurality of inactive leads are located generally near a second end of the PDIP package, the second end of the PDIP package structure located generally opposite the first end of the PDIP package structure.

12. An electronic device comprising:

a plastic dual-in-line packaging (PDIP) package structure, the PDIP package structure including:

a mold structure having a first surface;

5 a die disposed within the mold structure;

a die attach pad coupled to the die, the die attach pad having a first surface exposed from and substantially flush with the first surface of the mold structure;

10 a plurality of conductive leads; and

a conductive portion disposed at least substantially within the mold structure, the conductive portion coupled to the die attach pad and a portion of the plurality of leads such that heat is removed from the die via the die attach pad, the conductive portion and the portion of leads; and

15 a conductive structure adjacent the PDIP package structure and in thermal communication with the exposed first surface of the die attach pad such that heat is removed from the die via the die attach pad and the conductive structure.

25 13. The electronic device of Claim 12, further comprising a motherboard adjacent the PDIP package structure;

wherein the first surface of the mold structure faces generally away from the motherboard; and

wherein the conductive structure is a heat sink.

14. The electronic device of Claim 12, further comprising a motherboard adjacent the exposed first surface of the die attach pad; and

5 wherein the conductive structure forms a portion of the motherboard.

15. A method of forming an electronic device, comprising forming a plastic dual-in-line packaging (PDIP) package structure by:

providing a die attach pad;

5 attaching a die to the die attach pad; and

forming a mold structure at least substantially around the die such that the die attach pad has a first surface exposed from the mold structure.

10 16. The method of Claim 15, further comprising providing a motherboard and configuring the PDIP package structure such that the exposed first surface of the die attach is thermally coupled to the motherboard.

15 17. The method of Claim 15, further comprising configuring the PDIP package structure such that the first surface of the die attach pad is exposed from and substantially flush with a first surface of the mold structure.

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18. The method of Claim 15, further comprising configuring a heat sink in thermal communication with the exposed first surface of the die attach pad such that the heat sink removes heat from the die attach pad.

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19. The method of Claim 15, further comprising providing a motherboard; and configuring the mold structure such that a first side of the mold structure generally faces the motherboard and the first surface of the die attach is exposed from the second side of the mold structure opposite the first side of the mold structure.

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20. The method of Claim 15, wherein forming the PDIP package structure further includes configuring a plurality of leads such that each lead extends into  
5 contact with the die attach pad such that portion of leads are ground leads that remove heat from the die attach pad.

21. The method of Claim 15, wherein forming the  
10 PDIP package structure further includes:  
    providing a plurality of leads; and  
    forming a conductive portion coupled to the die  
attach pad and a portion of the plurality of leads such  
that heat is removed from the die via the die attach pad,  
15 the conductive portion and the portion of leads.